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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,063	06/22/2005	Peter Geigenberger	13311-00008-US	4909
23416 7590 09/16/2008 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER				
PAGE, BRENT T				
ART UNIT		PAPER NUMBER		
1638				
MAIL DATE		DELIVERY MODE		
09/16/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,063

Applicant(s)

GEIGENBERGER ET AL.

Examiner

BRENT PAGE

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45 and 47-60 is/are pending in the application.
- 4a) Of the above claim(s) 60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45 and 47-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/14/2008 has been entered.

The entry of new claims 59 and 60 is acknowledged. Claims 45, and 47-60 are examined on the merits below.

Any claim objections or rejections of record not specifically addressed below are considered hereby withdrawn in response to claim amendments when taken together with Applicants arguments.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 45, 47, 49-50, and 55-58 and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohlrogge et al (US Patent 5925805).

The claims are drawn to a method for the production of starch and/or oil comprising growing a transformed plant that expresses at least one hemoglobin and

recovering the starch and/or oil from the plant wherein the hemoglobin is from a soybean plant (*Glycine max*, soybean and Leguminosae) and the transformed plant is a soybean. The claims do not limit the exogenously expressed gene to anything and so any exogenously expressed gene meets the limitation of the claims. Since it is only required that the transformed plant expresses at least one hemoglobin, any transformed plant that naturally expresses hemoglobin meets the limitation of the claim. As defined by Applicants own specification, leghemoglobin is considered such a hemoglobin (see page 4 2nd full paragraph, for example), and thus any transformed legume meets the limitation of the claims.

Ohlrogge et al teach a method for the production of oil by transforming a soybean plant with a genetic construct designed to increase oil content (see claims, especially claims 16, 1, and 19 and 21, for example).

Claims 45, 47-52, 55-56 and 58 and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Zou et al (US Patent 6051755).

The claims are drawn to a method for the production of starch and/or oil comprising growing a transformed plant that expresses at least one hemoglobin and recovering the starch and/or oil from the plant wherein the hemoglobin is from *Arabidopsis* and the transformed plant is a *Arabidopsis*. The claims do not limit the exogenously expressed gene to anything and so any exogenously expressed gene meets the limitation of the claims. Since it is only required that the transformed plant expresses at least one hemoglobin, any transformed plant that naturally expresses

hemoglobin meets the limitation of the claim. Since the isolated hemoglobin of the instant invention comes from Arabidopsis, any transformed Arabidopsis plant meets the limitation of the claims as currently written.

Zou et al teach a method for the production of oil by transforming an Arabidopsis plant with a genetic construct designed to increase oil content (see claims, for example), wherein the hemoglobin expressed inherently is encoded by SEQ ID NO:5 since the sequence is isolated from Arabidopsis.

Claim Rejections - 35 USC § 103

Claims 45 and 47-58 remain rejected and claims 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harper et al (PGPUB-20020160378) in view of Sowa et al (1998 PNAS 95:10317-10321) and further, in view of Nykiforuk (US patent 6552250). The claims remain rejected for the reasons of record in the office actions mailed out 09/08/2006 and 10/19/2007 as well as the reasons set forth below. New claim 59 is rejected as applied to the previous claims and as well as the reasons set forth below.

Applicant's arguments filed 04/14/2008 have been fully considered but they are not persuasive.

Applicants urge that Harper et al fail to teach the production of starch and/or oil by overexpressing at least one hemoglobin in a plant (pages 4-5 of response).

This is not persuasive because the claims are not limited to plants that are "overexpressing" hemoglobin, they are only required to express it. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., over-expression of hemoglobin) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, Harper et al do, in fact disclose that the preferred plant species is "particularly those Brassica species useful as sources of seed oil" (see paragraph 8 of under the detailed description of the invention). It naturally follows that oil is produced when such a species is grown, and certainly the production of oil is suggested wherein species that are useful as sources of seed oil are used.

Applicants urge that Harper et al do not teach that any of the disclosed genes increase production of starch and/or oil or the physiological effect of the transformation of any such genes (pages 4-5 of response).

This is not persuasive because the claims do not require the starch and/or oil to be increased in the transformed plant. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., increased starch and /or oil production) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the

current claims also do not recite any physiological effect on the transformed plant. The current claims merely require that a plant is transformed with hemoglobin and that oil or starch is recovered.

Applicants further urge that the whole of the invention must be obvious and the the prior art does not reveal the property discovered by the Applicants (pages 5-6 of response).

This is not persuasive because the property referred to is not part of the claim limitations as discussed above. Furthermore, the combination of the references render obvious both the transformation of plants with hemoglobin, including oil producing species, as well as the recovery of such oil. Applicants appear to be arguing exclusively against Harper et al, and not over the combination of references. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The recitation of T2 seeds in claim 59 is an obvious design choice as a representative of Arabidopsis seeds that would be readily appreciated by one of ordinary skill in the art. T2 seeds are well-known in the art.

No claims are free of the prior art.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT PAGE whose telephone number is (571)272-5914. The examiner can normally be reached on Monday-Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571)-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brent T Page

/Anne Marie Grunberg/

Supervisory Patent Examiner, Art Unit 1638

